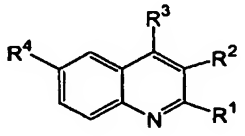
WHAT IS CLAIMED IS:

1. Quinoline derivative of formula 1, or its pharmaceutically acceptable salt of the same:

formula 1



wherein,

R^1 is piperazinyl, 2-methylpiperazinyl, diazepinyl or *N*-methyl-*N*-(2-*N*'-methylamino)ethylamine group;

R^2 is H, halogen atom, C_1~C_4 alkyl or C_1~C_4 haloalkyl;

R^3 is H, halogen atom, vinyl or furanyl group; and

R^4 is halogen atom or nitro group.

2. The derivative of claim 1, wherein R^1 is 2-methylpiperazinyl, diazepinyl or *N*-methyl-*N*-(2-*N*'-methylamino)ethylamine;

R^2 is H, bromine, methyl, ethyl, propyl, chloropropyl or fluoropropyl;

R^3 is H, chlorine, bromine, iodine, vinyl or 2-furanyl group; and

R^4 is chlorine, bromine, iodine, or nitro group.

3. The derivative of claim 1, wherein the derivative is selected from the group consisting of:

3-methyl-6-nitro-2-piperazin-1-yl-quinoline;

3-ethyl-6-nitro-2-piperazin-1-yl-quinoline;

6-nitro-2-piperazin-1-yl-3-quinoline;

3-(3-chloropropyl)-6-nitro-2-piperazin-1-yl-quinoline;

3-(3-fluoropropyl)-6-nitro-2-piperazin-1-yl-quinoline;

6-iodo-2-pipeerazin-1-yl-quinoline;

6-bromo-2-piperazine-1-yl-quinoline;

6-chloro-2-piperazin-1-yl-quinoline;

3-bromo-6-nitro-2-piperazin-1-yl-quinoline;

4-chloro-6-nitro-2-piperazin-1-yl-quinoline;

4-bromo-6-nitro-2-piperazin-1-yl-quinoline;

4-iodo-6-nitro-2-piperazin-1-yl-quinoline;

6-nitro-2-piperazin-1-yl-4-vinylquinoline;

4-(2-furanyl)-6-nitro-2-piperazin-1-yl-quinoline;

2-(3-methylpiperazin-1-yl)-6-nitroquinoline;

2-(N-methyl-N-(2-N'-methylamino)ethyl)amino-6-nitroquinoline; and

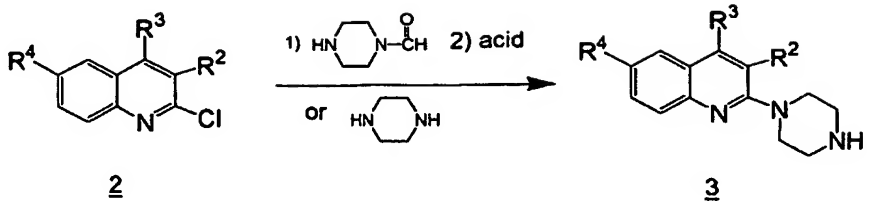
2-[1,4]diazepin-1-yl-6-nitoquinoline.

4. A method for preparing the derivative of formula 1 of claim 1 comprises:

1) substituting the quinoline compound of formula 2 with 1-piperazinecarboxaldehyde;

2) treating thus obtained mixture with acid compound or substituting it with piperazine followed by introducing piperazinyl group at 2-position of quinoline compound of formula 2:

Reaction Scheme 1



2 3

wherein, R^2 is H, bromine, methyl, ethyl, propyl, chloropropyl, or fluoropropyl group;

R^3 is H, chlorine, or bromine;

R^4 is chlorine, bromine, iodine, or nitro group.

5. A pharmaceutical composition comprising the quinoline derivative of the formula 1 as an effective ingredient for preventing or treating serotonin-related mental disorder.

6. The composition of claim 1, wherein the mental disorder is a depression.